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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/849,662	Applicant(s) PADMANABHAN ET AL.
	Examiner Ashok B. Patel	Art Unit 2154

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/27/05*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

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DETAILED ACTION

1. Claims 1-41 are subject to examination.

Response to Arguments

2. Applicant's arguments with respect to claims 1-41 have been considered but are moot in view of the new ground(s) of rejection except for the following:

Rejection of claims 12, 13, and 23-26 under 35 U.S.C. § 103(a):

Applicant's argument:

"For the reasons discussed above with respect to claims 2 and 3, dependent from independent claim 1, it is readily apparent that this rejection should be withdrawn."

"Contrary to suggestions in the Office Action the mathematical models used to triangulate a location using the time delays in wireless communication are not applicable to wired network transmission across multiple nodes."

Examiner's response:

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., wired network transmission across multiple nodes) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Rejection of Claims 27- 32 and 38-41 Under 35 U-S.C. § 102(e):

Applicant's argument:

"Moreover, the Examiner takes Official notice to the fact that it would have been obvious to one of ordinary skill in the art the time the invention was made to compute a dispersion metric in association with determining the geographic location of an Internet host. Applicants' representative respectfully avers to the contrary regarding the obviousness of employing a dispersion metric in connection with the method of Biliris, et al. and traverses the aforementioned well known statements to request that the Examiner cite a reference in support of his position pursuant to MPEP 2144.03."

Examiner's response:

Please refer the claim rejection provided below.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 7-12, 23-26, 36 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. The term "delay time" in claims 1, 7-12, 23-26, 36 and 37 is a relative term which renders the claim indefinite. The term "delay time" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 2, 5-11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Augart (US 6, 778, 524) in view of Stilp (US 2003/0095069 A1).

Referring to claim 1,

The reference teaches a method of determining the location of an Internet host (col.1, lines 5-8) using a first computer system, comprising:

obtaining route information relating to first and second network paths between a host IP address associated with the Internet host and the first computer system and a second computer system, respectively, wherein the first network path comprises the first computer system, the Internet host, and at least one intermediate network node, the second network path comprises the second computer system, the Internet host, and at least another intermediate network node, and wherein the route information comprises a plurality of router labels associated with the host IP address and one of the at least one intermediate network node and the at least another intermediate network node (col. 4, lines 56 through col.5, line 17, Note: "Each computer connected to the Internet is independent and may be capable of operating as a host computer (host) that primarily provides data over the Internet or a client computer (client) that primarily receives data over the Internet. A host computer may receive a data request from any other computer

on the Internet and respond to the request by transmitting any of various types of data, such as hypertext markup language (HTML) code, back to the client. A client computer may send data requests to various hosts on the Internet and then download data in response. Typically, host computers are used by information providers for various commercial, educational, or governmental purposes and are dedicated host computers (servers or Web servers)" col.1, lines 10-24);

extracting a first location code from the route information corresponding to a router label associated with one of the Internet host and an intermediate network node proximate the Internet host (col.5, lines 19-33);

consulting a data store comprising at least one data set having location codes and corresponding location information (col.5, lines 1-6);

obtaining first location information from the data store corresponding to the first location code associated with the one of the Internet host and the intermediate network node proximate the Internet host (col.5, lines 64 through col.6, lines 10, col.10, lines 25-43) ; and

providing a first location estimate of the location of the Internet host according to the first location information from the data store corresponding to the first location code (col.5, lines 1-6, col.10, lines 25-43).

Augart fails to teach determining a delay time associated with the network path; and selectively correlating the location estimate according to the delay time associated with the network path.

Stilp teaches in para. [0122], "In a TDOA/FDOA type of Wireless Location System, locations of wireless transmitters are calculated by measuring the differences in the times that each SCS 10 records for the arrival of the signal from a wireless transmitter." and in para. [0254], "The purpose of the constraints is to limit the amount of processing time that the Wireless Location System spends optimizing the results for each multipath mitigation calculation. " Stilp takes into consideration the time delay associated with the components with respect to calculating the location of wireless transmitters.(para. [0254], [0120]) . (determining a delay time associated with the network path; and selectively correlating the location estimate according to the delay time associated with the network path.) Also Stilp teaches, in Fig. 9A, that higher quality of location estimate can be produced from lower quality location estimate.

Therefore, it would have been obvious for one in ordinary skill in the art at the time the invention was made to enhance the system of Augart with the conceptual teachings of Stilp to achieve higher quality of location estimate of Auguart's IP host by using Stilp's time delay associated with the network path. It would have been obvious because Stilp in Fig. 9A teaches that higher quality of location estimate can be produced from lower quality location estimate.

Referring to claim 2,

Augart teaches the method of claim 1. further comprising: extracting the location code by examining the router labels in route order along the path from the host to the computer system until a location code is found that is usable to obtain location information from the data store. (col. Line 64-col. 6, line 10).

Referring to claim 5,

The reference teaches the method of claim 1, further comprising:

obtaining route information relating to each network path between the host IP address and each of a plurality of computer system wherein the route information comprises a plurality of router labels associated with the host IP address, and each of a plurality of computer systems, and the at least one intermediate network node in each network path; ((col. 4, lines 56 through col.5, line 17, Note: "Each computer connected to the Internet is independent and may be capable of operating as a host computer (host) that primarily provides data over the Internet or a client computer (client) that primarily receives data over the Internet. A host computer may receive a data request from any other computer on the Internet and respond to the request by transmitting any of various types of data, such as hypertext markup language (HTML) code, back to the client. A client computer may send data requests to various hosts on the Internet and then download data in response. Typically, host computers are used by information providers for various commercial, educational, or governmental purposes and are dedicated host computers (servers or Web servers)" col.1, lines 10-24);

extracting a location code for each network path from the route information corresponding to a router label associated with one of the Internet host and the at least one intermediate network node in each network path (col.5, lines 19-33);

obtaining second location information from the data store corresponding to each location code (col.5, lines 64 through col.6, lines 10, col.10, lines 25-43);

providing a plurality of location estimate of the location of the Internet host according to the location information from the data store corresponding to each location code (col.5, lines 1-6, col.10, lines 25-43); and

correlating at least two of the location estimates to provide an improved location estimate of the location of the Internet host (col.10, lines 44-57, col.11, lines 5-21).

Referring to claim 6,

The reference teaches the method of claim 1, wherein the location code comprises one of a city code, and airport code, and a country code (col.5, lines 64 through col.6, lines 10, col.17, lines 45-48), and wherein obtaining the route information comprises using a traceroute tool (col.9, lines 49 through col.10, line 12).

Referring to claim 7,

Claim 7 is a claim to a software tool for carrying out the method steps of claim 1. Therefore claim 7 is rejected for the reasons set forth for claim 1.

Referring to claim 8,

Claim 8 is a claim to a computer-readable medium having computer executable instructions for carrying out the method steps of claim 1. Therefore claim 8 is rejected for the reasons set forth for claim 1.

Referring to claim 9,

Claim 8 is a claim to a system for carrying out the method steps of claim 1. Therefore claim 8 is rejected for the reasons set forth for claim 1.

Referring to claim 10,

Claim 10 is a claim for geographical location estimate data associated with an Internet host, the estimate data resulting from a process that includes the method of claim 1. Therefore claim 10 is rejected for the reasons set forth for claim 1.

Referring to claim 11,

Claim 11 is a claim to method that includes the method steps of claim 1 (using multiple computer systems). Therefore claim 11 is rejected for the reasons set forth for claim 1.

8. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Claim rejected under 35 U.S.C. 103(a) as being unpatentable over Augart (US 6, 778, 524) in view of Stilp (US 2003/0095069 A1). as applied to claim 1 above, and further in view of Yakhini et al. (hereinafter Yakhini)(US 6, 768, 820 B1)

Referring to claims 3 and 4,

Augart and Stilp fail to teach determining a confidence metric representative of the accuracy of the location estimate; and selectively providing the location estimate of the location of the Intemet host if the confidence metric exceeds a threshold., and determining a confidence metric representative of the accuracy of the location estimate based upon the delay time between the Internet host and the network node associated with the location estimate.

Yakhini teaches "Examples of a robust location metric is the median or the trimmed mean. Examples of robust dispersion metrics are the IQR and MAD metrics discussed above in the threshold determination section. Two of the advantages of using robust metrics, as opposed to the use of average and standard deviation, are that they are far less influenced by outliers and they do not make assumptions of the nature

of the underlying distribution of data." (col. 20, line 31-41, the teachings of the reference is the statistical methodology associated with dispersion metrics and their advantages in determining a threshold.)

Therefore, it would have been obvious for one in ordinary skill in the art at the time the invention was made to enhance the system of Augart and Stilp to achieve higher quality of location estimate of Augart's IP host by using Stilp's time delay associated with the network path along with Yakhini's robust dispersion metrics to determine the threshold of the Stilp's confidence . It would have been obvious because Stilp in Fig. 9A teaches that higher quality of location estimate can be produced from lower quality location estimate and the advantage of using robust metrics, as opposed to the use of average and standard deviation, is that they do not make assumptions of the nature of the underlying distribution of data."

9. Claims 12, 13, and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gray et al. (herein after Gray) (US 4, 891, 761) in view of Augart (US 6, 778, 524)

Referring to claim 12,

The reference Gray teaches to measure a multiple time delays as stated "Generally speaking, a typical LORAN-C system includes a master transmitting station and at least two, but preferably four "slave" transmitters. The master station transmits a coded series of pulses used to synchronize the operation of the "slave" transmitters. After a predetermined coding delay, each "slave" transmitter will transmit a group of coded pulses. A LORAN-C receiver placed upon the vehicle and the reference monuments

would receive both the signals transmitted by the master as well as all of the signals transmitted by the "slave" transmitters. Since the exact latitude/longitude coordinates of each of these stations is known, the time delays (TD's) between the transmissions by the "slave" transmitters and the receipt of these signals by the vehicle are used, through the standard triangulation technique, to determine the exact latitude/ longitude coordinates of the vehicle or the monuments.", in col.5, lines 38-55. (measuring a first delay time relating to a first network path, measuring a second delay time relating to a second network path and measuring a third delay time relating to a third network path, and correlating the first, second, and third delay times; and providing a location estimate of the location according to the correlation of the first, second, and third delay times.) The reference fails to teach to apply the teachings of the reference to the network paths between a host IP address associated with the internet host and computer systems. The reference Augart teaches probing various routes and "a composite geographic location may be provided based on information for plural different routers. Depending upon how large an area is served by the identified exchange point, the geographic location of the requestor may be known with more or less precision.", col.10, lines 44-52, col. 4, lines 56 through col.5, line 17, Note: "Each computer connected to the Internet is independent and may be capable of operating as a host computer (host) that primarily provides data over the Internet or a client computer (client) that primarily receives data over the Internet. A host computer may receive a data request from any other computer on the Internet and respond to the request by transmitting any of various types of data, such as hypertext markup language (HTML) code, back to the client. A

client computer may send data requests to various hosts on the Internet and then download data in response. Typically, host computers are used by information providers for various commercial, educational, or governmental purposes and are dedicated host computers (servers or Web servers)" col.1, lines 10-24). Since, the Gray teaches the relationship between the distance and time delay in the context wireless transmissions, a question to any one having ordinary skill in the art will arise on how to relate the time delay and "geographical distance" precisely, and question to any one having ordinary skill in the art will arise on how to relate the time delay and "geographical distance" precisely if the transmission path is not a wireless transmission path. It is obvious to one having ordinary skill in the art to create this relationship of the time delay and distance by an empirical approach such as probabilistic model. Therefore, it would have been obvious for one in ordinary skill in the art at the time the invention was made to enhance the system of Gray by providing Augart's location estimate of the node with respect to time delay observed from different transmission paths to a node in conjunction to the TTL value.

Referring to claim 13,

The reference teaches wherein correlating the first, second, and third delay times comprises triangulating the first, second, and third delay measurements. (col.5, lines 31-59)

Referring to claim 23,

Claim 23 is a claim to a software tool for carrying out the method steps of claim 12. Therefore claim 23 is rejected for the reasons set forth for claim 12.

Referring to claim 24,

Claim 24 is a claim to a computer-readable medium having computer executable instructions for carrying out the method steps of claim 12. Therefore claim 24 is rejected for the reasons set forth for claim 12.

Referring to claim 25,

Claim 25 is a claim to a system for carrying out the method steps of claim 12. Therefore claim 25 is rejected for the reasons set forth for claim 12.

Referring to claim 26,

Claim 26 is a claim for geographical location estimate data associated with an Internet host, the estimate data resulting from a process that includes the method of claim 12. Therefore claim 26 is rejected for the reasons set forth for claim 12.

10. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gray et al. (herein after Gray) (US 4, 891, 761) in view of Augart (US 6, 778, 524) as applied to claim 12 above, and further in view of Intriligator et al (hereinafter Intriligator) (UD 6, 356, 842)

Referring to claims 14 and 15,

Keeping in mind the teachings of the references Gray and Augart, since, the reference Gray teaches the relationship between the distance and time delay in the context wireless transmissions wherein the time delay to a central station from the monuments as well as the vehicle can be recorded and processed, a question to any one having ordinary skill in the art will arise on how to relate the time delay and "geographical distance" <u>precisely</u> if the transmission path is not a wireless transmission path. It is

obvious to one having ordinary skill in the art to create this relation of the time delay and distance by using an empirical approach such as probabilistic model. The transformation of teaching of the reference Gray (the concept of measuring the time delay and relating it to the known location of the reference monuments (distance as well as coordinates) which is being used to locate the position of the vehicle at a given time (col.7, lines 3-7)) and using the data collection capabilities as well determination capabilities of the nearest node of the reference Augart for the wire-line network where in the time delay between various nodes of the network are made available is obvious to one having ordinary skills in the art. (consulting a data store comprising N sets of first, second, and third delay measurements between the first, second, and third computer systems, respectively, and N known hosts, as well as location information associated with the N known hosts, wherein N is an integer; performing a comparison of the first, second, and third delay times with the N sets of first, second, and third delay measurements in the data store; determining a nearest set of first, second, and third delay measurements according to the comparison; and providing a location estimate of the Internet host according to the nearest set of first, second, and third delay measurements. However, both references fail to teach wherein performing the comparison of the first, second, and third delay times with the N sets of first, second, and third delay measurements in the data store comprises determining N Euclidian distances corresponding to the Euclidian distances between the N sets of first, second, and third delay measurements in the data store and the first, second, and third delay times, and wherein providing a location estimate of the Internet host according to the

nearest set of first, second, and third delay measurements comprises selecting location information associated with the set of first, second, and third delay measurements in the data store associated with the smallest Euclidian distance as the location estimate. The reference Intriligator teaches "FIG. 8 depicts a calculation of Euclidian distance which can be used as a similarity score. Again, one skilled in the art will appreciate that many other techniques can be used to obtain a similarity measure. Numeral 801 identifies a TEMPLATE to which a new sample 802 will be compared. For each element in the sample (1 through N, where N is the length of the sample), a difference score 803 is obtained. This difference score is simply the difference between each sample element and the matching (or respective) element in the TEMPLATE. Once these difference scores have been calculated, the measure of similarity 804 is obtained by squaring all the difference scores and then summing them (and taking the square root of this sum of squared differences) (col. 15, lines 15-53) (wherein performing the comparison of the first, second, and third delay times with the N sets of first, second, and third delay measurements in the data store comprises determining N Euclidian distances corresponding to the Euclidian distances between the N sets of first, second, and third delay measurements in the data store and the first, second, and third delay times, and wherein providing a location estimate of the Internet host according to the nearest set of first, second, and third delay measurements comprises selecting location information associated with the set of first, second, and third delay measurements in the data store associated with the smallest Euclidian distance as the location estimate.)Therefore, it would have been obvious for one in ordinary skill in the art at the time the invention was

made to enhance the system of Gray and Augart with a probabilistic model and applying Intriligator's algorithm for finding the smallest Euclidian distance such that the composite geographic location may be provided based on information for plural different routers as taught by Augart.

11. Claims 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gray et al. (herein after Gray) (US 4, 891, 761) in view of Augart (US 6, 778, 524) as applied to claim 12 above, and further in view of Maine et al. (hereinafter Maine)(US 5, 515, 062)

Referring to claim 16, 17, 18 ,19, 20, 21 and 22,

Keeping in mind the teachings of the references Gray and Augart, since, the reference Gray teaches the relationship between the distance and time delay in the context wireless transmissions wherein the time delay to a central station from the monuments as well as the vehicle can be recorded and processed, a question to any one having ordinary skill in the art will arise on how to relate the time delay and "geographical distance" <u>precisely</u> if the transmission path is not a wireless transmission path. It is obvious to one having ordinary skill in the art to create this relation of the time delay and distance by using an empirical approach such as probabilistic model. The transformation of teaching of the reference Gray (the concept of measuring the time delay and relating it to the known location of the reference monuments (distance as well as coordinates) which is being used to locate the position of the vehicle at a given time (col.7, lines 3-7)) and using the data collection capabilities as well determination capabilities of the nearest node of the reference Augart for the wire-line network where

in the time delay between various nodes of the network are made available is obvious to one having ordinary skills in the art. The reference Augart also teaches the location code includes a city code, and airport code. (col.5, lines 64 through col.6, lines 10, col.17, lines 45-48), and wherein obtaining the route information comprises using a traceroute tool (col.9, lines 49 through col.10, line 12) However, both references fail to teach the use of the probability density function and weighted least mean square algorithm to optimize the location estimate. The reference Maine teaches "In addition, the random errors typically associated with location parameters may be statistically estimated with probability density functions having standard deviations, and a weighted least mean squares estimator may be used to average results from multiple location determinations.(col.19, lines 38-43). Therefore, it would have been obvious for one in ordinary skill in the art at the time the invention was made to enhance the system of Gray and Augart with a probabilistic model and applying Maine's the random errors estimation techniques such that the composite geographic location may be provided based on information for plural different routers as taught by Augart.

12. Claims 27-32 and 38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Claim rejected under 35 U.S.C. 103(a) as being unpatentable over Biliris et al. (hereinafter Biliris) (US 2002/0078233 A1) in view of Yakhini et al. (hereinafter Yakhini)(US 6, 768, 820 B1)

Referring to claim 27, 33 and 34,

The reference Biliris teaches a method of determining the location of an Internet host using a first computer system, comprising:

obtaining partial IP-to-location mapping information from a data source (page 7, para. [0095]);

obtaining network routing information (page 7, para.[0097];

clustering together IP addresses corresponding to hosts in the same geographic location according to network routing information to obtain cluster information (page 7, para. [0093]);

correlating the partial P-to-location information with the cluster information; and providing a location estimate of the location of the Internet host according to the correlation of the partial Ip-to-location information and the cluster information.(page 7, para. [0097]).

Biliris fails to teach computing a dispersion metric representative of the accuracy of the location estimate of the location and selectively providing the location estimate if the dispersion metric is less than a threshold value and a threshold value that is dependent on the size of cluster.

Yakhini teaches "Examples of a robust location metric is the median or the trimmed mean. Examples of robust dispersion metrics are the IQR and MAD metrics discussed above in the threshold determination section. Two of the advantages of using robust metrics, as opposed to the use of average and standard deviation, are that they are far less influenced by outliers and they do not make assumptions of the nature of the underlying distribution of data." (col. 20, line 31-41, the teachings of the reference is the statistical methodology associated with dispersion metrics and their advantages in determining a threshold.)(a dispersion metric representative of the accuracy of the

location estimate of the location and selectively providing the location estimate if the dispersion metric is less than a threshold value and a threshold value that is dependent on the size of cluster.)

Therefore, it would have been obvious for one in ordinary skill in the art at the time the invention was made to enhance the system of Biliris with Yakhini's robust dispersion metrics to determine accuracy representative . It would have been obvious because the advantage of using robust metrics, as opposed to the use of average and standard deviation, is that they do not make assumptions of the nature of the underlying distribution of data."

Referring to claims 28 and 29,

The reference Biliris teaches the method of claim 27, wherein obtaining network routing information comprises using a routing protocol. wherein the routing protocol is one of BGP, RP, OSPF, IGRP, and EGP. (page 7, para. [0097]) .

Referring to claim 30,

The reference Biliris teaches the method of claim 27, wherein clustering together IP addresses corresponding to hosts in the same geographic location according to network routing information to obtain cluster information comprises associating an address prefix used by a routing protocol with a geographical location. (page 7, para.[0097]-[0099]).

Referring to claims 31 and 32,

The reference Biliris teaches sub-dividing the geographical location associated with the address prefix into at least two clusters according to a geographical spread associated with the geographical location. (page 7, para.[0098]).

Referring to claim 38,

Claim 38 is a claim to a software tool for carrying out the method steps of claim 27. Therefore claim 38 is rejected for the reasons set forth for claims 27, 33 and 34.

Referring to claim 39,

Claim 39 is a claim to a computer-readable medium having computer executable instructions for carrying out the method steps of claim 27. Therefore claim 39 is rejected for the reasons set forth for claims 27, 33 and 34.

Referring to claim 40,

Claim 40 is a claim to a system for carrying out the method steps of claim 27. Therefore claim 40 is rejected for the reasons set forth for claims 27, 33 and 34.

Referring to claim 41,

Claim 41 is a claim for geographical location estimate data associated with an Internet host, the estimate data resulting from a process that includes the method of claim 27. Therefore claim 41 is rejected for the reasons set forth for claims 27, 33 and 34.

13. Claims 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Biliris et al. (hereinafter Biliris) (US 2002/0078233 A1) in view of Augart (US 6, 778, 524).

Referring to claim 35,

Keeping in mind the teachings of the reference Biliris, the reference fails to teach obtaining network route information as claimed in claim 27. The reference Augart teaches the method of claim 27, further comprising: obtaining route information relating to a first network path between a host IP

address associated with the Internet host and the first computer system, wherein the first network path comprises the first computer system, the Internet host, and at least one intermediate network node, and wherein the route information comprises a plurality of router labels associated with the host IP address and the at least one intermediate network node (col. 4, lines 56 through col.5, line 17, Note: "Each computer connected to the Internet is independent and may be capable of operating as a host computer (host) that primarily provides data over the Internet or a client computer (client) that primarily receives data over the Internet. A host computer may receive a data request from any other computer on the Internet and respond to the request by transmitting any of various types of data, such as hypertext markup language (HTML) code, back to the client. A client computer may send data requests to various hosts on the Internet and then download data in response. Typically, host computers are used by information providers for various commercial, educational, or governmental purposes and are dedicated host computers (servers or Web servers)" col.1, lines 10-24);

extracting a first location code from the route information corresponding to a router label associated with one of the Internet host and an intermediate network node proximate the Internet host (col.5, lines 19-33);

consulting a data store comprising at least one data set having location codes and corresponding location information (col.5, lines 1-6);

obtaining first location information from the data store corresponding to the first location code associated with the one of the Internet host and the intermediate network

node proximate the Internet host (col.5, lines 64 through col.6, lines 10, col.10, lines 25-43); and

providing a first location estimate of the location of the Internet host according to the first location information from the data store corresponding to the first location code. (col.5, lines 1-6, col.10, lines 25-43).

Therefore, it would have been obvious for one in ordinary skill in the art at the time the invention was made to enhance the system of Biliris by adding Augart's the route obtaining information such that the geographical location of a node can be estimated as explained by Augart "Once network identifiers for routers are identified in this manner, such network identifiers can be looked up in a database in an attempt to identify geographic locations for such routers, thereby providing a geographic map of nodes on the network. In addition, using information obtained from probing various routes along the network information concerning routing patterns on the network often can be derived.

14. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Biliris et al. (hereinafter Biliris) (US 2002/0078233 A1) in view of Augart (US 6, 778, 524). as applied to claim 35 above, and further in view of Gray et al. (herein after Gray) (US 4, 891, 761)

Referring to claim 36,

Keeping in mind the teachings of the references Biliris and Augart as stated above, both references fail to teach measuring delay times relating to network paths and correlating delay times and providing a location estimate of the host according to delay times. The

reference Gray teaches to measure a multiple time delays as stated "Generally speaking, a typical LORAN-C system includes a master transmitting station and at least two, but preferably four "slave" transmitters. The master station transmits a coded series of pulses used to synchronize the operation of the "slave" transmitters. After a predetermined coding delay, each "slave" transmitter will transmit a group of coded pulses. A LORAN-C receiver placed upon the vehicle and the reference monuments would receive both the signals transmitted by the master as well as all of the signals transmitted by the "slave" transmitters. Since the exact latitude/longitude coordinates of each of these stations is known, the time delays (TD's) between the transmissions by the "slave" transmitters and the receipt of these signals by the vehicle are used, through the standard triangulation technique, to determine the exact latitude/ longitude coordinates of the vehicle or the monuments.", in col.5, lines 38-55. (measuring a first delay time relating to a first network path, measuring a second delay time relating to a second network path and measuring a third delay time relating to a third network path, and correlating the first, second, and third delay times; and providing a location estimate of the location according to the correlation of the first, second, and third delay times.) Since, the claimed elements do not include the wireless transmissions at al as taught by the reference, and question to any one having ordinary skill in the art will arise on how to relate the time delay and "geographical distance" precisely if the transmission path is not a wireless transmission path. It is obvious to one having ordinary skill in the art to create this relation of the time delay and distance by an empirical approach such as probabilistic model .Therefore, it would have been obvious for one in ordinary skill in the

art at the time the invention was made to enhance the system of Biliris and Augart by providing Gray's to the location estimate of the node with respect to time delay observed from different transmission paths to a node in conjunction to the TTL value of Augart.

15. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Biliris et al. (hereinafter Biliris) (US 2002/0078233 A1) in view of Gray (US 4, 891, 761)

Referring to claim 37,

Keeping in mind the teachings of the references Biliris as stated above, the reference fails to teach measuring delay times relating to network paths and correlating delay times and providing a location estimate of the host according to delay times. The reference Gray teaches to measure a multiple time delays as stated "Generally speaking, a typical LORAN-C system includes a master transmitting station and at least two, but preferably four "slave" transmitters. The master station transmits a coded series of pulses used to synchronize the operation of the "slave" transmitters. After a predetermined coding delay, each "slave" transmitter will transmit a group of coded pulses. A LORAN-C receiver placed upon the vehicle and the reference monuments would receive both the signals transmitted by the master as well as all of the signals transmitted by the "slave" transmitters. Since the exact latitude/longitude coordinates of each of these stations is known, the time delays (TD's) between the transmissions by the "slave" transmitters and the receipt of these signals by the vehicle are used, through the standard triangulation technique, to determine the exact latitude/ longitude coordinates of the vehicle or the monuments.", in col.5, lines 38-55. (measuring a first

delay time relating to a first network path, measuring a second delay time relating to a second network path and measuring a third delay time relating to a third network path, and correlating the first, second, and third delay times; and providing a location estimate of the location according to the correlation of the first, second, and third delay times.) Since, the claimed elements do not include the wireless transmissions at al as taught by the reference, and question to any one having ordinary skill in the art will arise on how to relate the time delay and "geographical distance" <u>precisely</u> if the transmission path is not a wireless transmission path. It is obvious to one having ordinary skill in the art to create this relation of the time delay and distance by an empirical approach such as probabilistic model. Therefore, it would have been obvious for one in ordinary skill in the art at the time the invention was made to enhance the system of Biliris by providing Gray's to the location estimate of the node with respect to time delay observed from different transmission paths to a node.

Conclusion

Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok B. Patel whose telephone number is (571) 272-3972. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abp
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